

ABSTRACT

A computerized scheme to assist radiologists in improving the diagnostic accuracy for abnormalities (e.g., nodules) in medical images by use of similar images for malignant abnormalities and benign abnormalities. The method includes developing a database of medical images which includes both confirmed cancers and confirmed benign abnormalities; obtaining a medical image including at least one abnormality; selecting at least one feature for comparison from an unknown abnormality and at least one known abnormality, respectively; determining a similarity measure between an unknown, undiagnosed abnormality and at least one of the previously diagnosed abnormalities; and selecting from the database of known abnormalities at least one known abnormality for comparison with the unknown abnormality in order to determine a likelihood of malignancy. In one embodiment, an artificial neural network is employed to determine a similarity measure between an unknown nodule and at least one known nodule.